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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,141	02/22/2002	Alan W. Peters	W8505-07	3313

7590 06/18/2004

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EXAMINER	
GRIFFIN, WALTER DEAN	

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/084,141	PETERS ET AL.	
	Examiner	Art Unit	
	Walter D. Griffin	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: The first paragraph of the specification should be amended to reflect the correct continuing data.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis et al. (US 4,626,419) in view of Buchanan et al. (US 5,591,417) and Vasalos et al. (US 4,221,677).

The Lewis reference discloses a composition comprising a support such as alumina or silica-alumina. The support contains at least 50 wt% alumina. Cerium oxide (0.5-10 wt%) and an alkali metal (0.4-5 wt%) such as potassium or sodium are on the support. The Lewis reference also discloses a cracking catalyst composition that includes a cracking catalyst and the cerium oxide-alkali metal composition. The cracking catalyst composition may be mixture of cracking catalyst particles and cerium oxide-alkali metal composition particles or the cerium oxide-alkali metal composition may use the cracking catalyst as the support. The Lewis reference also discloses an FCC process in which a hydrocarbon feed is cracked by contacting the feed with the cracking catalyst composition. The cracking composition is then regenerated. (See col. 1, lines 58-68; col. 2, lines 1-2, 10-20, and 41-68; col. 3, lines 1-15 and 40-65; col. 4, lines 5-14; col. 5, lines 25-33; col. 6, lines 23-68; and col. 7, lines 1-5).

The Lewis reference does not disclose the inclusion of an alkaline earth metal or a Group IB/IIB metal in the composition. It also does not disclose that the feed contains at least 0.1 wt% nitrogen.

The Buchanan reference discloses a composition that is used to remove sulfur oxide and nitrogen oxide from flue gases. The composition contains a support such as alumina and metals such as Group IA metals and rare earth metals. Group IB metals such as copper are also disclosed as being effective in removing sulfur and nitrogen oxides. (See col. 1, line 36 through col. 2, line 48 and col. 10, line 41 through col. 13, line 19).

The Vasalos reference discloses that alkali and alkaline earth metals are metallic reactants that are responsible for the reduction of sulfur oxides from regeneration zones. (See col. 4, lines 20-42 and col. 5, lines 20-65).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the composition and process of Lewis by including a Group IB metal such as copper in the composition in an effective amount as suggested by Buchanan because Group IB metals are effective sulfur oxide adsorbents and therefore would be expected to improve the sulfur oxide removal ability of the composition of Lewis.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the composition and process of Lewis by substituting an alkaline earth metal for the disclosed alkali metal because Vasalos discloses that these metals equivalently reduce sulfur oxides and the substitution of equivalents is within the level of ordinary skill.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Lewis by utilizing a nitrogen-containing feed because the resulting composition would also be expected to result in lower NOX emissions as suggested by Buchanan thereby indicating that nitrogen-containing feeds may be tolerated in the cracking process.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed.

Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 6,129,834. Although the conflicting claims are not identical, they are not patentably distinct from each other because each set of claims is drawn to a composition for removing NO_x and a process for using the composition in which each composition contains the same components. The claims differ in that the patented claims include particle sizes and specific amounts of the components in the catalyst. However, the patented claims include each of the components in the present claims.

Claims 1-6 and 8-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 6,143,167. Although the conflicting claims are not identical, they are not patentably distinct from each other because each set of claims is drawn to a composition for removing NO_x and a process for using the composition in which each composition contains the same components. The claims differ in that the patented claims include particle sizes, specific amounts of the components in the catalyst, and specific components. However, the patented claims include each of the components in the present claims.

Claims 1-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 6,280,607. Although the conflicting claims are not identical, they are not patentably distinct from each other because each set of claims is drawn to a composition for removing NO_x and a process for using the composition in which each composition contains the same components. The claims differ in that the patented claims include particle sizes, specific amounts of the components in the catalyst, and specific components. However, the patented claims include each of the components in the present claims.

Claims 1-6 and 8-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 6,379,536. Although the conflicting claims are not identical, they are not patentably distinct from each other because each set of claims is drawn to a composition for removing NO_x and a process for using the composition in which each composition contains the same components. The claims differ in that the patented claims include particle sizes, specific amounts of the components in the catalyst, and specific components. However, the patented claims include each of the components in the present claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art not relied upon discloses compositions for use in FCC processes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is (571) 272-1447. The examiner can normally be reached on Monday-Friday 6:30 to 4:00; alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Walter D. Griffin
Primary Examiner
Art Unit 1764

WG
June 16, 2004